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PHOTOGRAPHIC INTERPRETATION MEMORANDUM

HARDENING OF AIR WARNING RADAR FACILITIES IN USSR, ROMANIA, AND POLAND

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HARDENING OF AIR WARNING RADAR FACILITIES IN USSR, ROMANIA, AND POLAND

Hardening of air warning radar facilities continues to be observed on KEYHOLE photography and is now confirmed at 42 locations in the USSR, four locations in Romania, and one in Poland (Figure 1). The most recent previous report, published in September 1969, listed only 29 locations that showed evidence of hardening, all in the USSR.* Information has become available on the protective storage of radars in shelters.

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25X1C [redacted] recently stated that a systematic program, instituted by the USSR, is underway to harden all the air warning radar facilities in Romania, primarily for protection from nuclear attack.** He confirmed NPIC speculation that the radar sails on the BAR LOCK early warning radar and the ROCK CAKE and STONE CAKE height finder radars are hinged to permit a radar to fit into the earth-covered shelter at the base of the radar mound.

As shown in the artist's concept, Figure 2, the outer portions of the sails on the BAR LOCK radar fold backward from their operational position, with the hinges approximately one-third of the distance from each end. The feeds on ROCK CAKE and STONE CAKE models are removed or folded and the entire sail is placed on the roof of the operations van. The mast supporting the SPOON REST early warning radar is hinged to allow the radar to be lowered to the ground or into an open, T-shaped revetment. The same source reported that no means had been designed for folding the sail on the SIDE NET height finder radar, because this radar had proved to be so reliable that it seemed preferable to shelter it in operational configuration. No information was available regarding the lack of protection for the BACK NET early warning radar.

Photographic evidence to date indicates that none of the radar facilities in Romania and Poland have overhead cover; however, the excavations and revetments observed closely resemble those detected in the USSR while they are in the early and mid stages of construction.

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*NPIC. PIM, TCS-20233/69, Continued Hardening of Air Warning Radar Facilities in the USSR, Sep 69 (TOP SECRET RUFF)

25X1A [redacted]

NPIC Project 111108NL

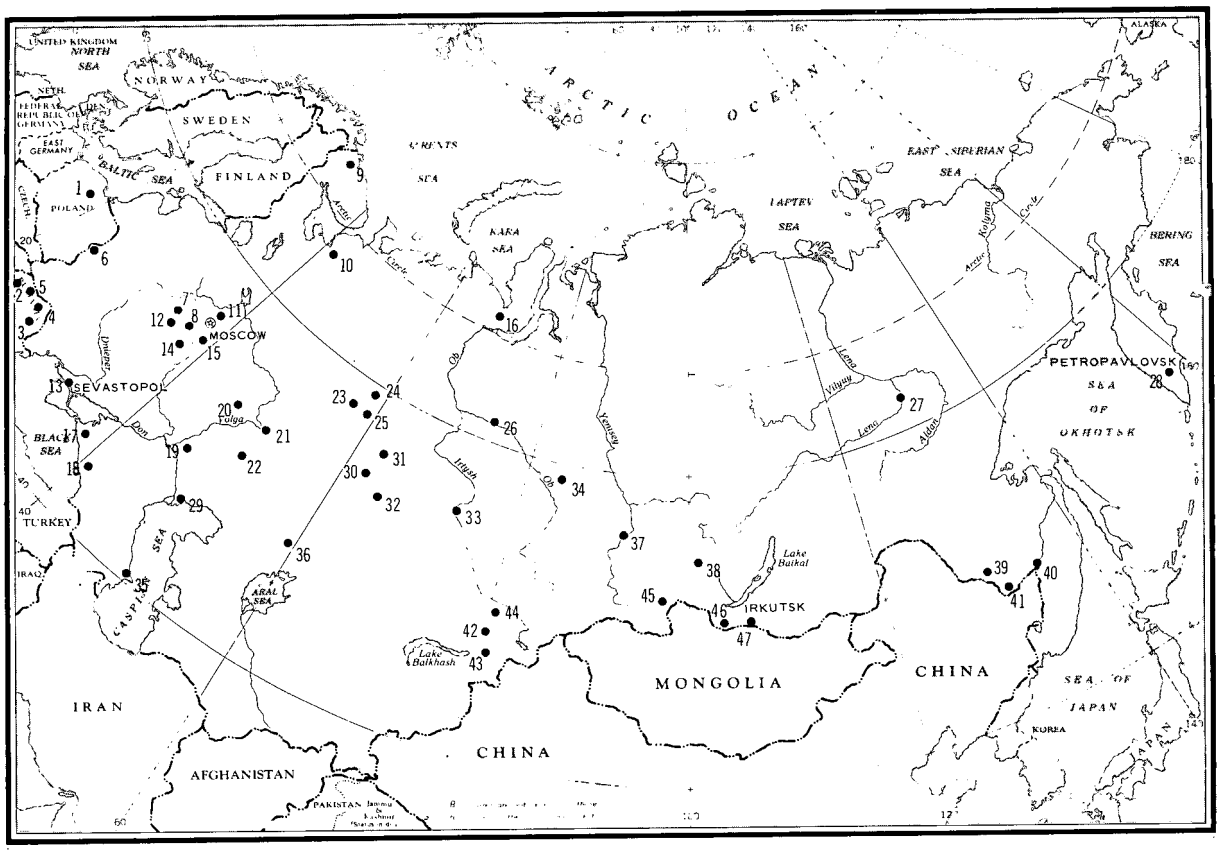

FIGURE 1. LOCATION OF HARDENED AIR WARNING RADAR FACILITIES

Item	Name	BE No	Coordinates
POLAND			
1	Grudziadz	[redacted]	53-30-50N 018-46-04E
ROMANIA			
2	Brasov		45-41-20N 025-36-00E
3	Caracal		44-05-30N 024-21-00E
4	Constanta-Mihail Kogalniceanu		44-21-31N 028-29-20E
5	Ianca		45-09-34N 027-25-51E
USSR			
10	Arkhangelsk/Talagi Airfield		65-36-01N 040-43-03E
29	Astrakhan		46-24-55N 047-56-05E
43	Ayaguz		47-57-00N 080-22-50E
38	Bratsk		56-14-45N 101-26-50E
36	Dombarovskiy		50-47-20N 059-32-00E
18	Gudauta		43-07-00N 040-33-10E
47	Irkutsk		52-13-30N 104-24-30E
14	Kalinin		56-52-50N 035-52-00E
45	Kansk		56-08-21N 095-39-51E
17	Kerch		45-19-30N 036-21-50E
40	Khabarovsk		48-25-00N 135-24-20E
34	Kolpashevo		58-20-00N 082-55-00E
37	Krasnoyarsk		56-02-58N 092-54-54E
32	Kustanay		53-11-50N 063-44-10E
41	Lastochka		46-25-30N 134-11-32E
19	Marinovka		48-37-00N 043-49-00E
46	Mischelevka		52-53-40N 103-32-45E

Item	Name	BE No	Coordinates
USSR (Cont)			
7	Moskva/Bryansk	[redacted]	53-13-00N 034-14-54E
15	Moskva/Kotovo		55-57-10N 037-31-50E
16	Naryan-Mar		67-39-55N 053-10-30E
6	Nezhin		51-05-20N 031-55-00E
25	Nizhniy Tagil		57-55-25N 059-57-10E
9	Olenegorsk		68-08-45N 033-31-00E
33	Omsk		54-59-49N 073-33-00E
12	Orel		52-59-30N 036-02-25E
23	Perm		57-56-40N 056-06-00E
28	Petropavlovsk		53-09-10N 158-31-40E
20	Pravdinsk		56-33-00N 043-22-00E
44	Semipalatinsk		50-21-10N 080-13-57E
24	Serov		59-42-40N 060-35-00E
13	Sevastopol Airfield		44-41-29N 033-34-33E
31	Shadrinsk		56-03-00N 063-40-00E
35	Sumgait		40-32-30N 049-31-20E
26	Surgut		61-17-00N 073-19-00E
30	Troitsk		54-01-50N 061-33-20E
21	Ulyanovsk		54-21-00N 048-19-30E
22	Uralsk		51-14-41N 051-24-10E
42	Ushakogv		47-56-30N 080-23-03E
11	Vyazma		55-10-11N 034-19-05E
27	Yakutsk		62-06-00N 129-41-10E
8	Yefremov		53-07-30N 038-10-30E
34	Zavitinsk		50-05-00N 129-28-00E

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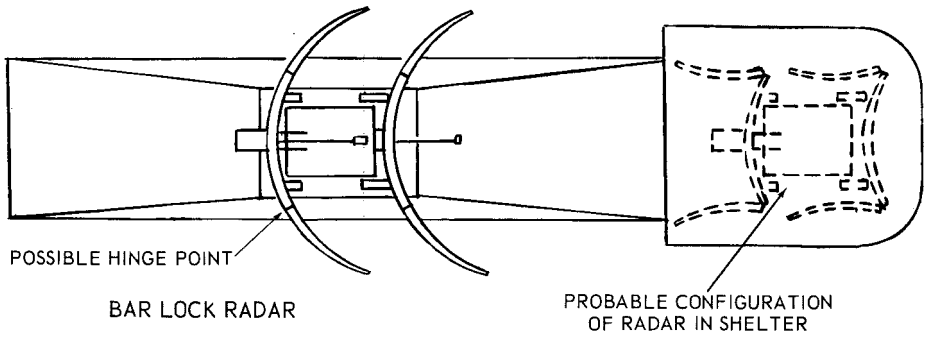

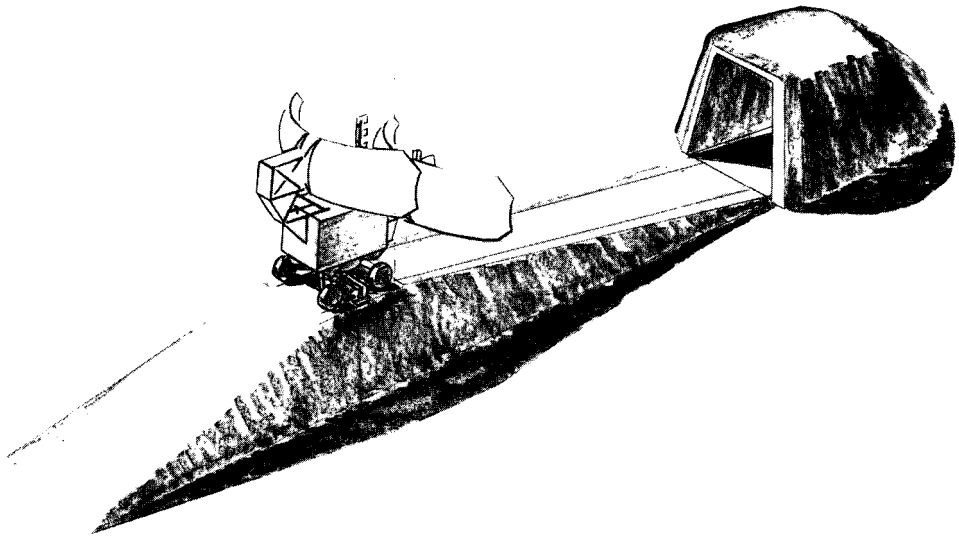

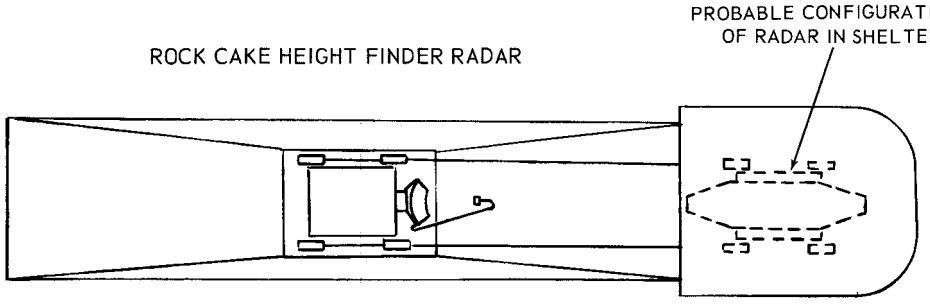

FIGURE 2. PLAN VIEWS AND ARTIST'S CONCEPT OF RADARS IN OPERATIONAL AND PROTECTED POSITIONS